

1 **DIRECT TESTIMONY**

2 **OF**

3 **JOSEPH M. LYNCH**

4 **ON BEHALF OF**

5 **SOUTH CAROLINA ELECTRIC & GAS COMPANY**

6 **DOCKET NO. 2009-489-E**

7

8 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND CURRENT**
9 **POSITION WITH SOUTH CAROLINA ELECTRIC & GAS COMPANY**
10 **(“SCE&G” OR “COMPANY”).**

11 A. My name is Joseph M. Lynch and my business address is 220 Operation
12 Way, Cayce, South Carolina. My current position with the Company is Manager
13 of Resource Planning.

14

15 **Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
16 **PROFESSIONAL EXPERIENCE.**

17 A. I graduated from St. Francis College in Brooklyn, New York with a
18 Bachelor of Science degree in mathematics. From the University of South
19 Carolina, I received a Master of Arts degree in mathematics, an MBA, and a Ph.D.
20 in management science and finance. I was employed by SCE&G as a Senior
21 Budget Analyst in 1977 to develop econometric models to forecast electric sales

1 and revenue. In 1980, I was promoted to Supervisor of the Load Research
2 Department. In 1985, I became Supervisor of Regulatory Research where I was
3 responsible for load research and electric rate design. In 1989, I became
4 Supervisor of Forecasting and Regulatory Research, and, in 1991, I was promoted
5 to my current position of Manager of Resource Planning.
6

7 **Q. WHAT ARE YOUR CURRENT DUTIES AS MANAGER OF RESOURCE**
8 **PLANNING?**

9 A. As Manager of Resource Planning, I am responsible for producing
10 SCE&G's forecast of energy, peak demand, and revenue; for developing the
11 Company's generation expansion plans; and for overseeing the Company's load
12 research program.
13

14 **Q. HAVE YOU TESTIFIED BEFORE THE PUBLIC SERVICE**
15 **COMMISSION OF SOUTH CAROLINA ("COMMISSION")**
16 **PREVIOUSLY?**

17 A. Yes. I have previously testified on a number of occasions before this
18 Commission.
19

20 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

1 A. The purpose of my testimony is to present the results of SCE&G's Rate
2 21A experiment and to explain why SCE&G is recommending to the Commission
3 that the rate be terminated.

4
5 **Q. WHAT OBSERVATIONS DID THE COMPANY MAKE FROM THE**
6 **RATE 21A EXPERIMENT?**

7 A. The Company made four primary observations from its analysis of the load
8 data collected in this experiment: 1) the percentage of energy consumed on peak
9 by Rate 21A customers has not changed significantly during the experimental
10 period; 2) while Rate 21A customers are much larger than the typical Medium
11 General Service ("MGS") customer, their load profile is essentially the same; i.e.,
12 there is little difference in percentage of energy consumed during peak periods; 3)
13 Rate 21A customers contribute a larger percentage to the system peak than they
14 contribute to non-fuel revenue among the MGS class; and 4) although half of the
15 Rate 21A customers implemented energy efficiency measures and lowered their
16 energy consumption, these measures did not shift energy consumption to off-peak
17 periods. Based on these observations, the Company recommends that Rate 21A be
18 terminated.

1 **Q. EXPLAIN THE RATE 21A EXPERIMENT AND WHY THE COMPANY**
2 **UNDERTOOK IT.**

3 A. On January 31, 2003 the Commission issued Order No. 2003-38 in Docket
4 No. 2002-223-E that, among other provisions, approved a stipulation agreement
5 between SCE&G and the South Carolina Merchants Association (“SCMA”).
6 Under the terms of the stipulation, and as set forth in Order No. 2003-38 at page
7 88, SCE&G created an experimental Rate 21A, the purpose of which was:

- 8 • to determine if a discount will encourage MGS customers to make
9 operational changes resulting in a shifting of peak loads to off-peak
10 periods and/or the shedding of peak loads;
- 11 • to determine the extent of any changes in usage; and
- 12 • to determine what, if any, discount is appropriate as a result of any
13 reduction of peak load.
14
15
16

17 **Q. DESCRIBE THE MGS CLASS AND WHAT PORTION IS COMPRISED**
18 **BY RATE 21A.**

19 A. For cost of service studies, SCE&G groups its retail electric rates into
20 several classes: residential, small general service, medium general service, large
21 general service, and street lighting. Customers in the MGS class are nonresidential
22 customers having a power demand in the neighborhood of seventy-five (75)
23 kilovolt amperes (kVA) or more. These customers can elect to obtain service
24 under three rate schedules: Rate 20, the primary rate; Rate 21, the standard time of

1 use (“TOU”) rate; and Rate 21A, the experimental TOU rate. Exhibit No.
2 _____ (JML-1) contains sales data for the test year showing that the MGS
3 class represents about 10.8% of territorial sales, of which Rate 21A represents
4 14.5% of the total MGS sales. It is clear from this exhibit that Rate 20,
5 representing 81.9% of the MGS sales, is the standard service schedule for the
6 MGS class.

7
8 **Q. HOW MUCH OF A DISCOUNT WAS DESIGNED INTO RATE 21A?**

9 A. During the test year in this case, which is the 12-month period ending
10 September 2009, the customers on Rate 21A paid \$27.2 million for service. If they
11 had received service under the standard rate, Rate 20, they would have paid \$28.3
12 million. The difference reflects a discount of about 3.5% .

13
14 **Q. DOES THE STUDY SHOW THAT RATE 21A SHIFTED PEAK LOADS TO**
15 **OFF-PEAK PERIODS AMONG THE PARTICIPATING CUSTOMERS?**

16 A. No. Exhibit No. _____ (JML-2) shows the percentage of kilowatt hours
17 (“kWh”) and kVA that occurred on-peak from 2005-2009 for Rate 21A, Rate 21,
18 and Rate 20. Although the on-peak percentages for Rate 21A increased slightly,
19 the on-peak percentage did not change significantly from 2005 through 2009. Rate
20 21 customers show a slightly smaller on-peak percentage with Rate 20 customers

1 recording a slightly higher on-peak percentage. Exhibit No. _____ (JML-3)
2 contains two graphs of kilowatt (“kW”) profiles. The first graph depicts the 24-
3 hour kW profile for the average weekday in August of each year from 2004 to
4 2009. This graph reflects that Rate 21A and Rate 20 customers have similar
5 consumption patterns. However, because of the size difference between these
6 rates, the scale distorts the graph. In order to remedy this issue and reflect a more
7 appropriate comparison, the bottom graph depicts the 24-hour loads divided by
8 their value at the 1 a.m. hour. The profiles for all three rates are thereby put on the
9 same scale and their relative profiles can be more easily compared. This
10 comparison demonstrates that Rate 20 customers placed more demand on peak for
11 the years 2004, 2005, and 2006 in a relative sense, while Rate 21A customers
12 recorded more demand on peak in years 2007, 2008, and 2009. The difference in
13 the shape of these two profiles is small. By contrast, the profile of Rate 21
14 customers is significantly different from Rate 20 and Rate 21A customers. Rate
15 21 customers seem to shift load to off-peak periods since they consume more
16 energy at night in all years.

17
18 **Q. DID YOU ANALYZE EACH RATE’S CONTRIBUTION TO THE SYSTEM**
19 **PEAK DEMAND?**

20 A. Yes. Since the system peak demand is a key driver in the need for
21 generating and transmission capacity and consequently capital costs on the system,

1 analysis of each rate's contribution to system peak is important. The table in
2 Exhibit No. ____ (JML-4) reflects the kW demand the customers of each rate
3 contributed to the system peak and the amount of non-fuel revenue paid during the
4 12-month period ending September 2009. During the test year, Rate 21A
5 contributed 13.6% of the MGS class's coincident peak demand while only
6 contributing 11.5% of the non-fuel revenue. Rate 20 on the other hand contributed
7 83.4% to the coincident peak and 84.6% to the non-fuel revenue. Since Rate 21A
8 customers add more to system costs than they provide in non-fuel revenue, the
9 Rate 21A discount is unwarranted.

10
11 **Q. DID SCE&G INVESTIGATE ANY OPERATIONAL MEASURES OR**
12 **EFFICIENCY UPGRADES THAT THE RATE 21A CUSTOMERS MAY**
13 **HAVE TAKEN?**

14 A. Yes. SCE&G surveyed its Rate 21A customers and asked them to identify
15 any operational measures or efficiency upgrades they undertook. As further shown
16 in Exhibit No. _____ (JML-5), of the 167 accounts surveyed, 83 accounts
17 indicated that they had implemented some form of energy efficiency measures.

18
19 **Q. DID YOU MEASURE AN IMPACT FROM THE EFFICIENCY STEPS**
20 **TAKEN?**

1 A. Yes. Exhibit No. _____ (JML-6) contains two graphs that compare
2 those Rate 21A customers who implemented some form of energy efficiency
3 measures and those who did not. The first graph shows that the average kWh per
4 customer of those implementing energy efficiency measures decreased more than
5 those that did not. For example, those customers who implemented energy
6 efficiency measures recorded on average an 11% decrease in the number of kWh
7 consumed from 2005 through 2009. By comparison, those customers who did not
8 implement any energy efficiency measures only recorded on average a 6%
9 decrease over the same time period. Thus, the net effect of the implementation of
10 energy efficiency measures by these customers appears to have decreased
11 consumption 5%. The second graph compares the trend in the percentage of kWh
12 consumed on peak. This comparison demonstrates that the efficiency measures
13 seem to have little or no effect on shifting consumption from on-peak periods.
14 This is likely because most of the measures undertaken involve high efficiency
15 lighting and appliances which lower overall consumption in effect making the
16 customer a smaller customer. However, these measures do little to change the
17 customer's load characteristics in terms of shifting consumption to off-peak
18 periods, which is the purpose of a TOU rate like Rate 21A.

19
20 **Q. WHAT DOES SCE&G RECOMMEND REGARDING RATE 21A?**

1 A. Since Rate 21A customers did not shift consumption to off-peak periods,
2 which was the desired outcome of this experiment, SCE&G recommends that Rate
3 21A be terminated and the customers on the rate be served on the most appropriate
4 alternate rate.

5

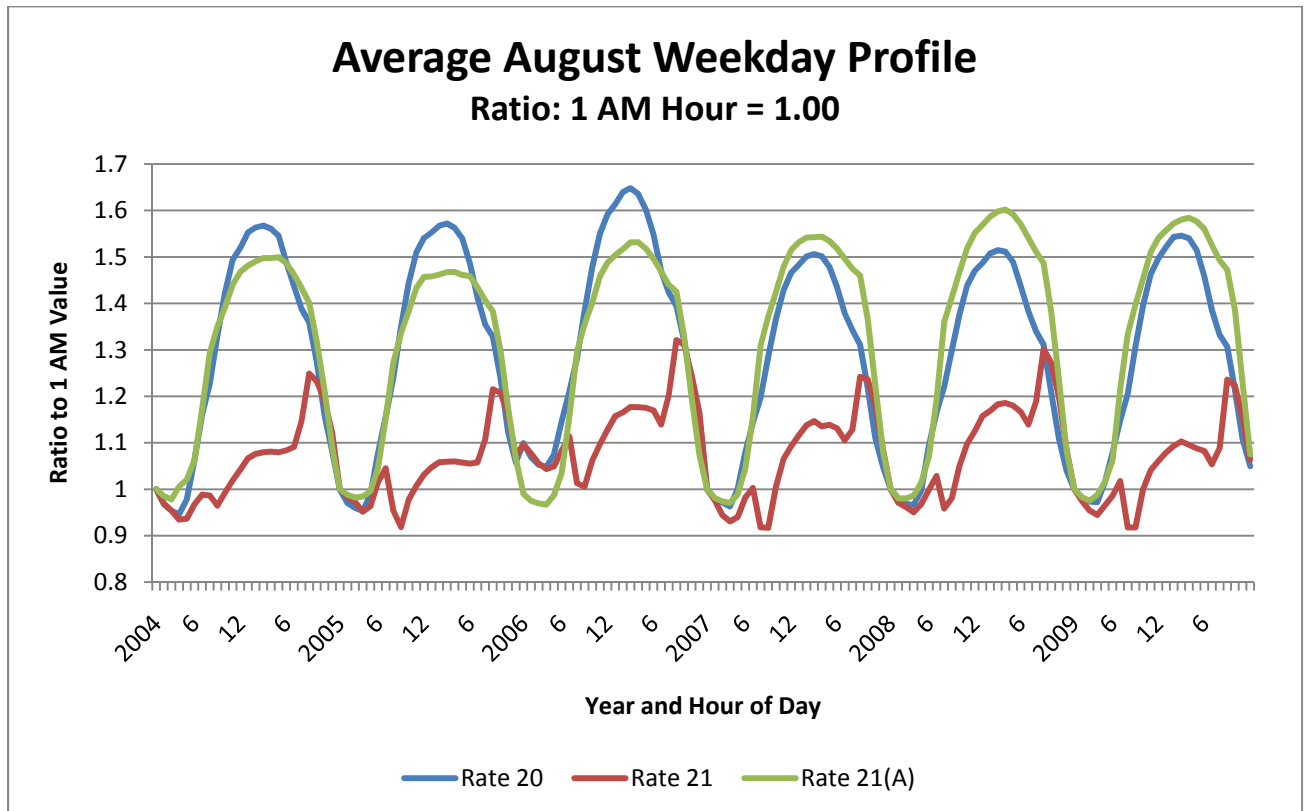
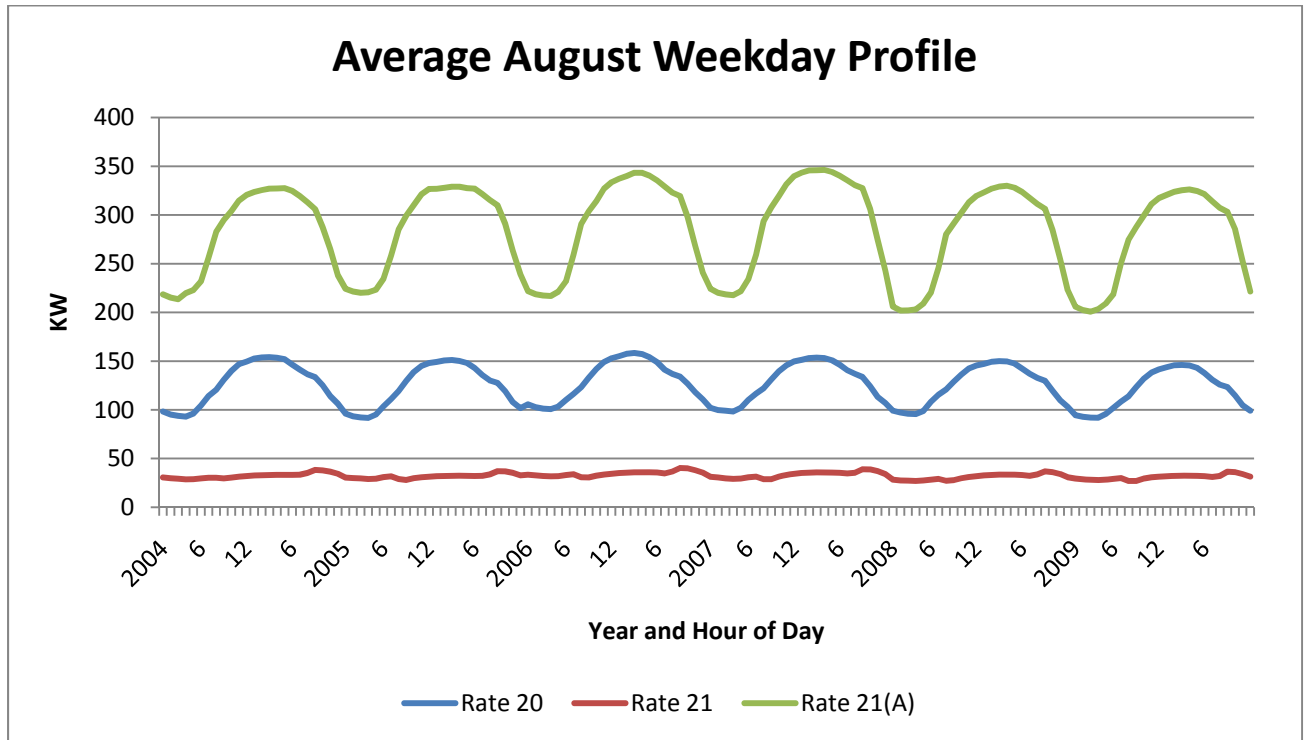
6 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

7 A. Yes, it does.

SCE&G Territorial Sales 12 Months Ending September 2009				
Class	Number of Customers	Sales (KWH)	% Sales	KWH per Customer
Residential	558,839	7,850,314,734	34.5%	14,048
SGS	89,987	3,218,809,948	14.1%	35,770
MGS	2,880	2,468,990,852	10.8%	857,288
LGS	368	7,447,534,052	32.7%	20,237,864
Other	241,696	1,801,194,403	7.9%	7,452
Total	893,770	22,786,843,989	100.0%	25,495

MGS Sales 12 Months Ending September 2009				
Class	Customer	Sales	% Sales	KWH per Customer
Rate 20	2,331	2,022,863,525	81.9%	867,809
Rate 21	381	88,232,312	3.6%	231,581
Rate 21(A)	168	357,895,015	14.5%	2,130,327
Total	2,880	2,468,990,852	100.0%	857,288

Billing Components % On-Peak						
	Rate 21(A)		Rate 20		Rate 21	
	KWH	KVA	KWH	KVA	KWH	KVA
2005	29.2%	98.0%	30.8%	99.8%	27.1%	85.1%
2006	29.4%	98.2%	30.5%	99.9%	27.1%	83.5%
2007	29.4%	98.6%	30.6%	99.8%	27.3%	84.4%
2008	29.3%	98.5%	30.6%	99.5%	27.3%	84.1%
2009	29.5%	98.1%	30.6%	99.7%	27.3%	77.6%



Data from Period 12 Months Ending September 2009				
	Coincident Peak Demand		Non-fuel Revenue	
	(KW)	(%)	(\$)	(%)
Rate 20	385,034	83.4%	109,345,847	84.6%
Rate 21	14,223	3.1%	5,095,676	3.9%
Rate 21A	62,653	13.6%	14,822,916	11.5%
MGS Total	461,910	100.0%	129,264,440	100.0%

Energy Efficiency Measures Taken By Rate 21A Customers	
<u>Measures</u>	<u>Count</u>
Lighting	70
Higher Efficiency Cases	36
Higher Efficiency HVAC	27
Reduce Hours (Lighting/HVAC)	5
Elec Commutated Motors in Cases	3
CPC	3
Load Shedding	2
Pulse Mullion Heater	1
Install Natural Gas Heat	1
Higher Efficiency Condenser	1
Added Night Strip	1
Note: Total of 83 Locations	

